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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/522,080	01/21/2005	Masahiro Tada	09792909-6091	6898

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EXAMINER
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LE, THAO P

ART UNIT	PAPER NUMBER
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2818

DATE MAILED: 09/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/522,080

Applicant(s)

TADA ET AL.

Examiner

Thao P. Le

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 April 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 January 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/28/05, 01/21/05</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### **Priority**

Acknowledge is made of applicants' claim for foreign priority base on an application 2002-221433 filed in Japan on 07/30/2002.

It is noted that Applicants have filled a certified copy of said application as required by U.S.C 119, which papers have been placed of record in the file.

Applicant is suggested to amend the specification to insert the cross-reference relate data.

### ***Election/Restriction***

Examiner confirms that Applicants elected to prosecute Claims 1-3 and have withdrawn Claims 4-5 without prejudice.

### ***Information Disclosure Statement***

Information Disclosure Statement (IDS) filed on **01/21/05**, **10/28/05** and made of record. The references cited on the PTOL 1449 form have been considered.

### ***Drawings***

The drawings are objected to for the following reasons.

Figures 11, 12-A-12C, 13 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.  
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**Claim 1 is rejected under 35 USC 102 (e) as being anticipated by Applicant  
Admitted Prior Art (AAPA) (Figs. 11, 12A-12C).**

Regarding claim 1, AAPA discloses a micromachine comprised of:

an input electrode 102b and an output electrode 102a disposed on a  
substrate (Fig. 11);

a band-shaped vibrator electrode (103a, Fig. 11) formed by laying a  
vibrating part over the output electrode with a space part interposed between the output

electrode and the vibrator electrode in a static in which both end parts of the vibrator electrode are supported on the input electrode and the substrate;

wherein an entire surface of each of the end parts of the vibrator electrode from an edge of each of the end parts to the vibrating part is completely fixed to the input electrode and the substrate (shown in Fig. 11, both end parts of the vibrator electrode are over the input electrodes).

**Claim 1 is rejected under 35 USC 102 (b) as being anticipated by Wang et al., "Q-enhancement Of Microelectromechanical Filters via Low-Velocity Spring coupling", submitted as IDS, hereinafter Wang.**

Regarding claim 1, Wang discloses a micromachine comprised of:

an input electrode and an output electrode disposed on a substrate (Fig. 5);

a band-shaped vibrator electrode (resonator beam) formed by laying a vibrating part over the output electrode with a space part interposed between the output electrode and the vibrator electrode in a static in which both end parts of the vibrator electrode are supported on the input electrode and the substrate;

wherein an entire surface of each of the end parts of the vibrator electrode from an edge of each of the end parts to the vibrating part is completely fixed to the input electrode and the substrate (shown in Fig. 5, both end parts of the resonator beam fixed on the input electrodes at the both end).

**Claims 1, 3 are rejected under 35 USC 102 (b) as being anticipated by  
Nguyen et al., U.S. Publication No. 20020021054, hereinafter Nguyen.**

Regarding claim 1, Nguyen discloses a micromachine comprised of (See Figs. 6-10 and depending portions of specification):

an input electrode Vswitch and an output electrode V1 disposed on a substrate (Fig. 6);

a band-shaped vibrator electrode (resonator) formed by laying a vibrating part over the output electrode with a space part interposed between the output electrode and the vibrator electrode in a static in which both end parts of the vibrator electrode are supported on the input electrode and the substrate;

wherein an entire surface of each of the end parts of the vibrator electrode from an edge of each of the end parts to the vibrating part is completely fixed to the input electrode and the substrate (shown in Figs. 6-10, both end parts of the resonator beam fixed on the input electrodes at the both end).

Regarding claim 3, Nguyen discloses the width of the end part of the vibrator electrode which end part is fixed to the input electrode is greater than width of the input electrode (Fig. 6).

For more interest, other references cited in PTO-892 also disclose the imitations cited in independent claim 1.

**Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 2-3 rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al., "Q-enhancement Of Microelectromechanical Filters via Low-Velocity Spring coupling", submitted as IDS, hereinafter Wang.**

Regarding claim 2, Wang doesn't disclose the vibrator electrode is formed of a material capable of being etched selectively without affecting a material formed input electrode. However, it is well known in the art that the material used for vibrator electrode or resonator is formed of material that has etch rate different from input electrode in order to not damage the input electrode while the vibrator electrode is being etched.

Regarding claim 3, Wang doesn't disclose the width of the end part of the vibrator electrode which end part is fixed to the input electrode is greater than width of the input electrode, however, the selection of such parameters such as **energy, concentration, temperature, time, molar fraction, depth, thickness, etc.**, would have been obvious and involve routine optimization which has been held to be within the level of ordinary skill in the art. "Normally, it is to be expected that a change in **energy, concentration, temperature, time, molar fraction, depth, thickness, etc., or in combination of the parameters** would be an unpatentable modification. Under some circumstances, however, changes such as these may impart patentability to a process if the particular ranges claimed produce a new and unexpected result which is different in kind and not merely degree from the results of the prior art ... such ranges are termed "critical ranges and the applicant has the burden of proving such criticality.... More particularly, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller* 105 USPQ233, 255 (CCPA 1955). See also *In re Waite* 77 USPQ 586 (CCPA 1948); *In re Scherl* 70 USPQ 204 (CCPA 1946); *In re Imscher* 66 USPQ 314 (CCPA 1945); *In re Norman* 66 USPQ 308 (CCPA 1945); *In re Swenson* 56 USPQ 372 (CCPA 1942); *In re Sola* 25 USPQ 433 (CCPA 1935); *In re Dreyfus* 24 USPQ 52 (CCPA 1934).

When responding to the office action, Applicants' are advice to provide the examiner with the line numbers and page numbers in the application and/or references cited to assist the examiner to locate the appropriate paragraphs.



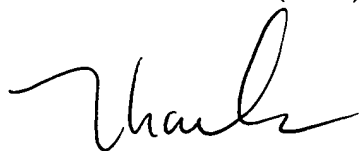
A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) day from the day of this letter. Failure to respond within the period for response will cause the application to become abandoned (see M.P.E.P 710.02(b)).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thao P. Le whose telephone number is 571-272-1785. The examiner can normally be reached on M-T (7-6).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Nelms can be reached on 571-272-1787. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Thao P. Le', with a stylized, cursive script.

Thao P. Le  
Primary Examiner  
Art Unit 2818  
September 19, 2006.